

- 9 -

C L A I M S

1. A method of reducing inflow of rock particles from an earth formation into a wellbore for the production of hydrocarbon fluid, the method comprising creating a zone of reduced compressive stiffness around the wellbore by removing rock material from the wall of the wellbore.
2. The method of claim 1, wherein the rock material is removed from the wellbore wall in an open-hole portion of the wellbore.
3. The method of claim 1 or 2, wherein the step of removing rock material from the wellbore wall comprises removing rock material from at least one elongate section of the wellbore wall.
4. The method of claim 3, wherein each said elongate section has a longitudinal axis extending in axial direction of the wellbore.
5. The method of claim 3 or 4, wherein the earth formation surrounding the wellbore is subjected to stresses including first, second and third principal stresses, and wherein said elongate section extends radially in a direction substantially perpendicular to a selected one of said principal stresses.
6. The method of claim 5 wherein said elongate section extends radially in a direction substantially perpendicular to the largest one of said principal stresses.
7. The method of claim 5 or 6 wherein the wellbore extends substantially vertically, and wherein said elongate section extends radially in a direction

- 10 -

substantially perpendicular to the largest horizontal principal stress.

8. The method of claim 5 or 6 wherein the wellbore extends substantially horizontally, and wherein said  
5 elongate section extends radially in a direction substantially perpendicular to the vertical principal stress.

9. The method of any one of claims 1-8, wherein the step of removing rock material from the wellbore wall  
10 comprises creating a plurality of perforations in the wellbore wall.

10. The method of claim 9, wherein said plurality of perforations is created in the form of an array of perforations.

11. The method of any one of claims 1-8, wherein the step of removing rock material from the wellbore wall  
15 comprises creating a slot in the wellbore wall.

12. The method of claim 11, wherein the slot substantially extends in axial direction of the wellbore.

13. The method of claim 11 or 12, wherein the slot is  
20 wedge shaped in a cross-sectional plane of the wellbore, and wherein the width of the slot decreases in radially outward direction.

14. The method of any one of claims 11-13, wherein the  
25 step of creating the slot includes

- a) lowering a string provided with a fluid jet cutter into the wellbore;
- b) pumping a fluid through the string so as to induce the fluid jet cutter to eject a fluid jet against the  
30 wall of the wellbore thereby creating a cut in the wellbore wall; and
- c) simultaneously with step b, moving the string in axial direction through the wellbore.

- 11 -

15. The method substantially as described hereinbefore  
with reference to the drawings.